FIG. 1

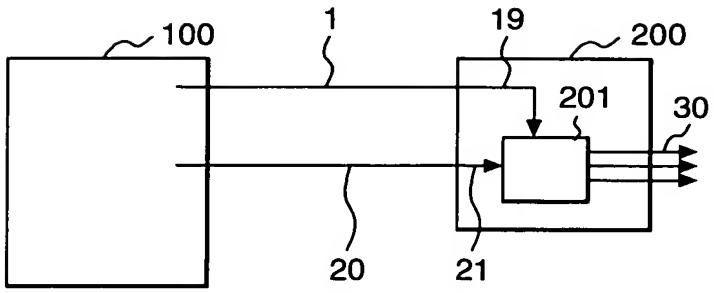

100
1
19
200
201
30
20
21

FIG. 2

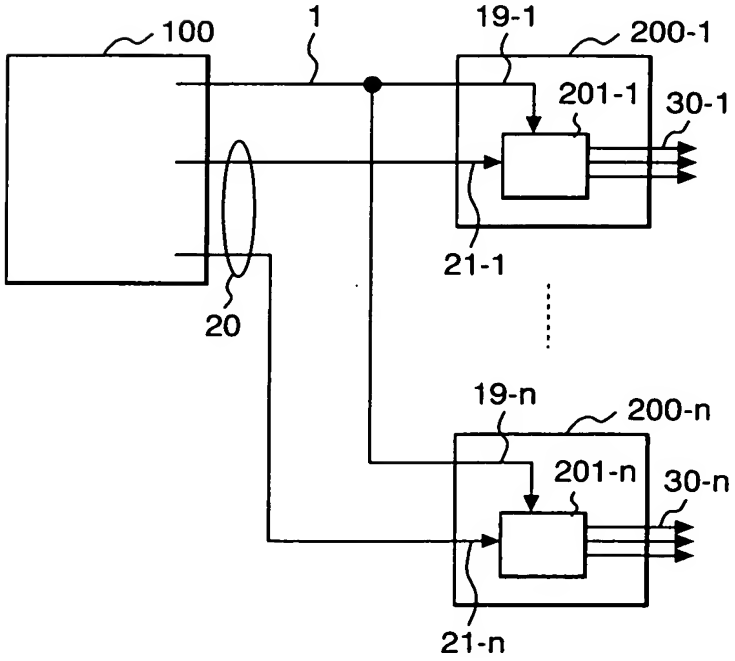

100
1
19-1
200-1
201-1
30-1
21-1
20
19-n
200-n
201-n
30-n
21-n

FIG. 3

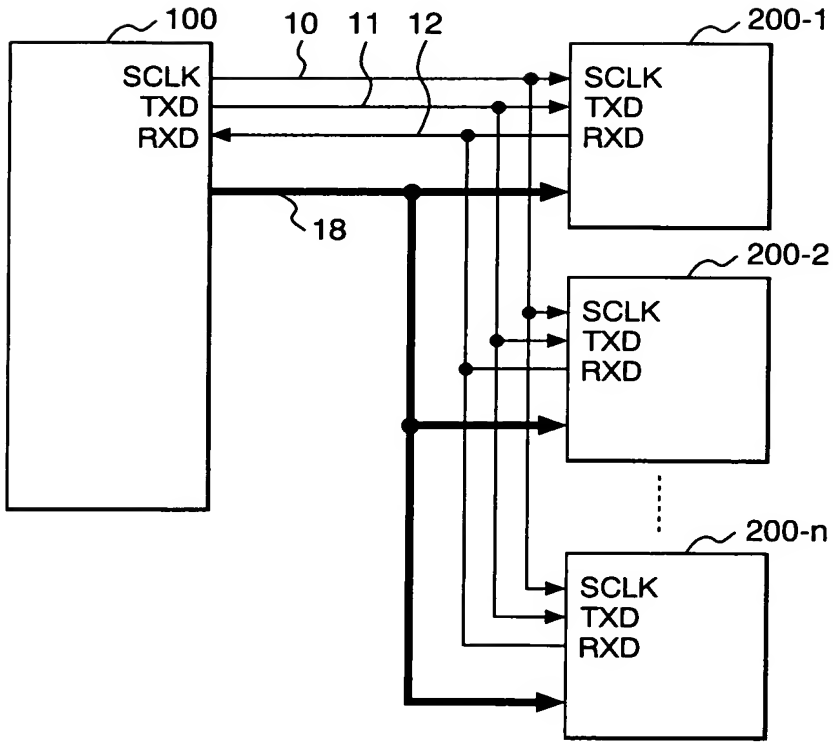

100
10
11
12
200-1
SCLK
TXD
RXD
SCLK
TXD
RXD
18
200-2
SCLK
TXD
RXD
200-n
SCLK
TXD
RXD

FIG. 4

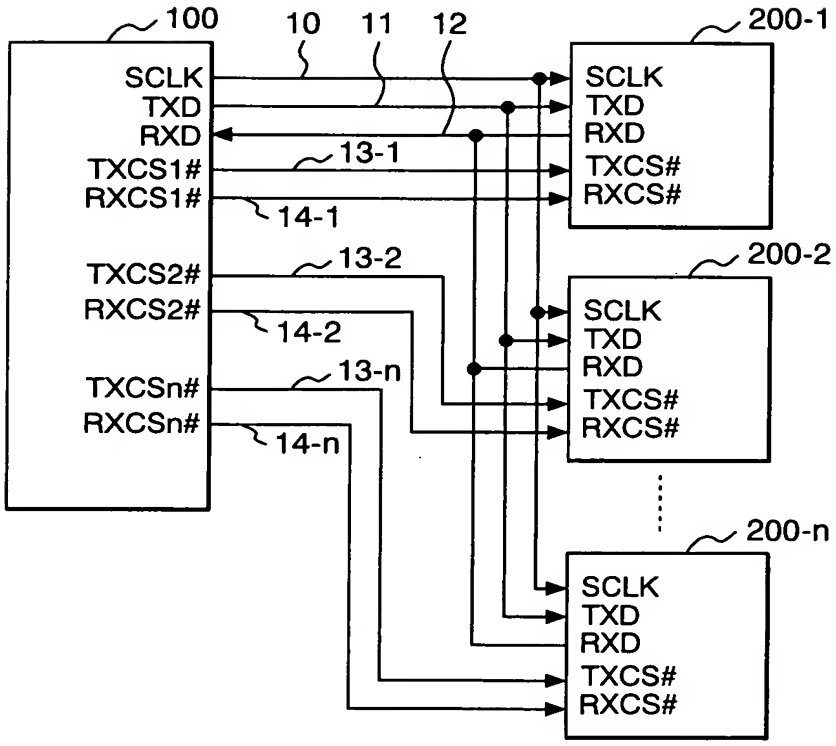

100
10
11
12
200-1
SCLK
TXD
RXD
TXCS1#
RXCS1#
13-1
14-1
TXCS#
RXCS#
TXCS2#
RXCS2#
13-2
14-2
200-2
TXCSn#
RXCSn#
13-n
14-n
200-n

FIG. 5

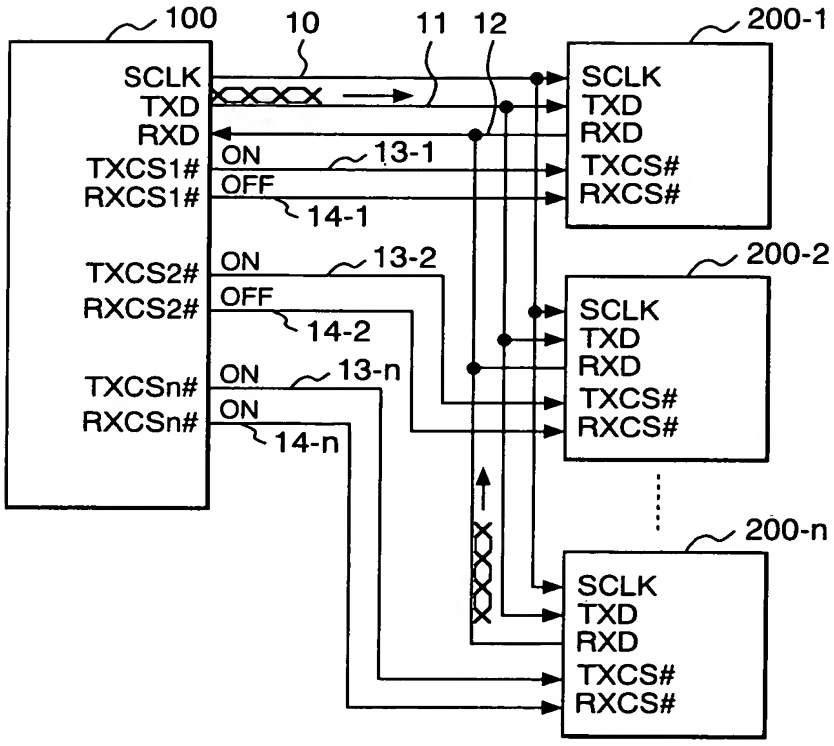

100
10
11
12
200-1
SCLK
TXD
RXD
TXCS1#
RXCS1#
ON
OFF
13-1
14-1
SCLK
TXD
RXD
TXCS#
RXCS#
TXCS2#
RXCS2#
ON
OFF
13-2
14-2
200-2
SCLK
TXD
RXD
TXCS#
RXCS#
TXCSn#
RXCSn#
ON
ON
13-n
14-n
200-n
SCLK
TXD
RXD
TXCS#
RXCS#

FIG. 6

case	TXCSi#			RXCSi#			MASTER → SLAVE 1	MASTER → SLAVE 2	MASTER → SLAVE n	SLAVE 1 → MASTER	SLAVE 2 → MASTER	SLAVE n → MASTER
	1	2	n	1	2	n						
1	OFF	OFF	OFF	*	*	*	INACTIVE	INACTIVE	INACTIVE	–	–	–
2	ON	OFF	OFF	*	*	*	ACTIVE	INACTIVE	INACTIVE	–	–	–
3	OFF	ON	OFF	*	*	*	INACTIVE	ACTIVE	INACTIVE	–	–	–
4	ON	ON	OFF	*	*	*	ACTIVE	ACTIVE	INACTIVE	–	–	–
5	OFF	OFF	ON	*	*	*	INACTIVE	INACTIVE	ACTIVE	–	–	–
6	ON	OFF	ON	*	*	*	ACTIVE	INACTIVE	ACTIVE	–	–	–
7	OFF	ON	ON	*	*	*	INACTIVE	ACTIVE	ACTIVE	–	–	–
8	ON	ON	ON	*	*	*	ACTIVE	ACTIVE	ACTIVE	–	–	–
9	*	*	*	OFF	OFF	OFF	–	–	–	INACTIVE	INACTIVE	INACTIVE
10	*	*	*	ON	OFF	OFF	–	–	–	ACTIVE	INACTIVE	INACTIVE
11	*	*	*	OFF	ON	OFF	–	–	–	INACTIVE	ACTIVE	INACTIVE
12	*	*	*	ON	ON	OFF	–	–	–	INHIBITED		
13	*	*	*	OFF	OFF	ON	–	–	–	INACTIVE	INACTIVE	ACTIVE
14	*	*	*	ON	OFF	ON	–	–	–	INHIBITED		
15	*	*	*	OFF	ON	ON	–	–	–	INHIBITED		
16	*	*	*	ON	ON	ON	–	–	–	INHIBITED		
17	ON	OFF	OFF	OFF	OFF	OFF	ACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
18	OFF	OFF	OFF	ON	OFF	OFF	INACTIVE	INACTIVE	INACTIVE	ACTIVE	INACTIVE	INACTIVE
19	ON	ON	ON	ON	OFF	OFF	ACTIVE	ACTIVE	ACTIVE	ACTIVE	INACTIVE	INACTIVE
20	ON	OFF	OFF	ON	OFF	OFF	ACTIVE	INACTIVE	INACTIVE	ACTIVE	INACTIVE	INACTIVE
21	ON	OFF	OFF	OFF	OFF	ON	ACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE

*: don't care

FIG. 7

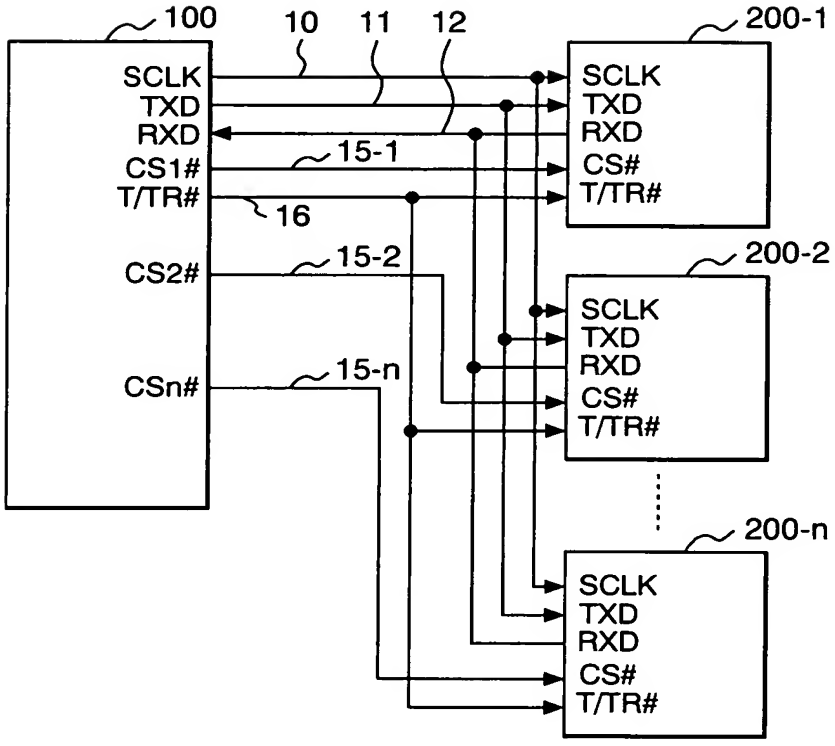

100
10
11
12
200-1
SCLK
TXD
RXD
CS1#
T/TR#
15-1
16
CS2#
15-2
200-2
CSn#
15-n
200-n
SCLK
TXD
RXD
CS#
T/TR#

FIG. 8

case	CS#			T/TR#	MASTER → SLAVE 1	MASTER → SLAVE 2	MASTER → SLAVE n	SLAVE 1 → MASTER	SLAVE 2 → MASTER	SLAVE n → MASTER
	1	2	n							
1	OFF	OFF	OFF	T	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
2	ON	OFF	OFF	T	ACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
3	OFF	ON	OFF	T	INACTIVE	ACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
4	ON	ON	OFF	T	ACTIVE	ACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
5	OFF	OFF	ON	T	INACTIVE	INACTIVE	ACTIVE	INACTIVE	INACTIVE	INACTIVE
6	ON	OFF	ON	T	ACTIVE	INACTIVE	ACTIVE	INACTIVE	INACTIVE	INACTIVE
7	OFF	ON	ON	T	INACTIVE	ACTIVE	ACTIVE	INACTIVE	INACTIVE	INACTIVE
8	ON	ON	ON	T	ACTIVE	ACTIVE	ACTIVE	INACTIVE	INACTIVE	INACTIVE
9	OFF	OFF	OFF	TR#	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
10	ON	OFF	OFF	TR#	ACTIVE	INACTIVE	INACTIVE	ACTIVE	INACTIVE	INACTIVE
11	OFF	ON	OFF	TR#	INACTIVE	ACTIVE	INACTIVE	INACTIVE	ACTIVE	INACTIVE
12	ON	ON	OFF	TR#	ACTIVE	ACTIVE	INACTIVE	INHIBITED		
13	OFF	OFF	ON	TR#	INACTIVE	INACTIVE	ACTIVE	INACTIVE	INACTIVE	ACTIVE
14	ON	OFF	ON	TR#	ACTIVE	INACTIVE	ACTIVE	INHIBITED		
15	OFF	ON	ON	TR#	INACTIVE	ACTIVE	ACTIVE	INHIBITED		
16	ON	ON	ON	TR#	ACTIVE	ACTIVE	ACTIVE	INHIBITED		

FIG. 9

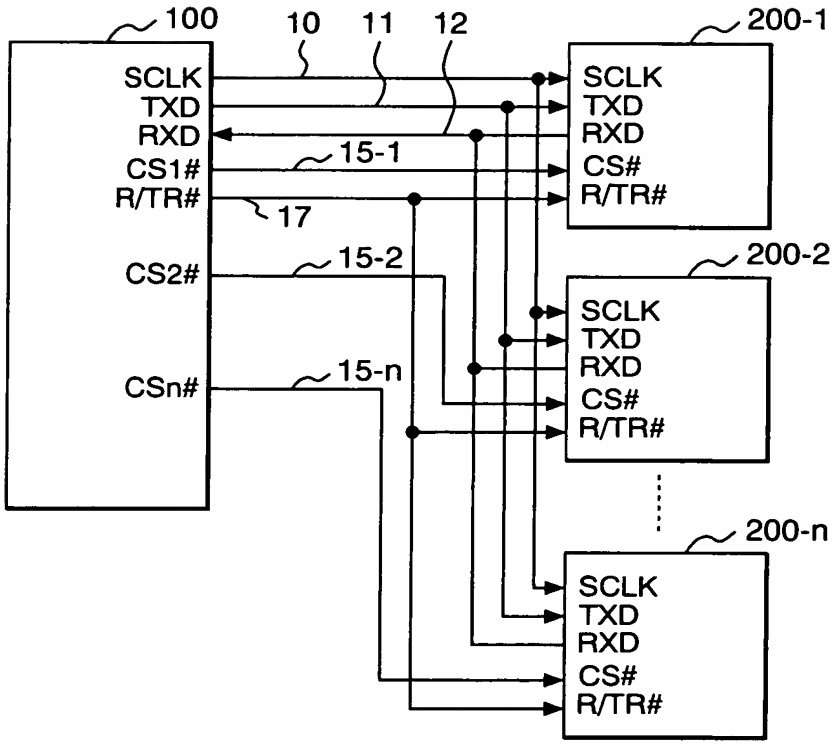

100
10
11
12
200-1
SCLK
TXD
RXD
CS1#
R/TR#
15-1
17
CS2#
15-2
200-2
CSn#
15-n
200-n
SCLK
TXD
RXD
CS#
R/TR#

FIG. 10

case	CS#			R/TR#	MASTER → SLAVE 1	MASTER → SLAVE 2	MASTER → SLAVE n	SLAVE 1 → MASTER	SLAVE 2 → MASTER	SLAVE n → MASTER
	1	2	n							
1	OFF	OFF	OFF	R	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
2	ON	OFF	OFF	R	INACTIVE	INACTIVE	INACTIVE	ACTIVE	INACTIVE	INACTIVE
3	OFF	ON	OFF	R	INACTIVE	INACTIVE	INACTIVE	INACTIVE	ACTIVE	INACTIVE
4	ON	ON	OFF	R	INACTIVE	INACTIVE	INACTIVE	INHIBITED		
5	OFF	OFF	ON	R	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	ACTIVE
6	ON	OFF	ON	R	INACTIVE	INACTIVE	INACTIVE	INHIBITED		
7	OFF	ON	ON	R	INACTIVE	INACTIVE	INACTIVE	INHIBITED		
8	ON	ON	ON	R	INACTIVE	INACTIVE	INACTIVE	INHIBITED		
9	OFF	OFF	OFF	TR#	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE	INACTIVE
10	ON	OFF	OFF	TR#	ACTIVE	INACTIVE	INACTIVE	ACTIVE	INACTIVE	INACTIVE
11	OFF	ON	OFF	TR#	INACTIVE	ACTIVE	INACTIVE	INACTIVE	ACTIVE	INACTIVE
12	ON	ON	OFF	TR#	ACTIVE	ACTIVE	INACTIVE	INHIBITED		
13	OFF	OFF	ON	TR#	INACTIVE	INACTIVE	ACTIVE	INACTIVE	INACTIVE	ACTIVE
14	ON	OFF	ON	TR#	ACTIVE	INACTIVE	ACTIVE	INHIBITED		
15	OFF	ON	ON	TR#	INACTIVE	ACTIVE	ACTIVE	INHIBITED		
16	ON	ON	ON	TR#	ACTIVE	ACTIVE	ACTIVE	INHIBITED		

FIG. 11

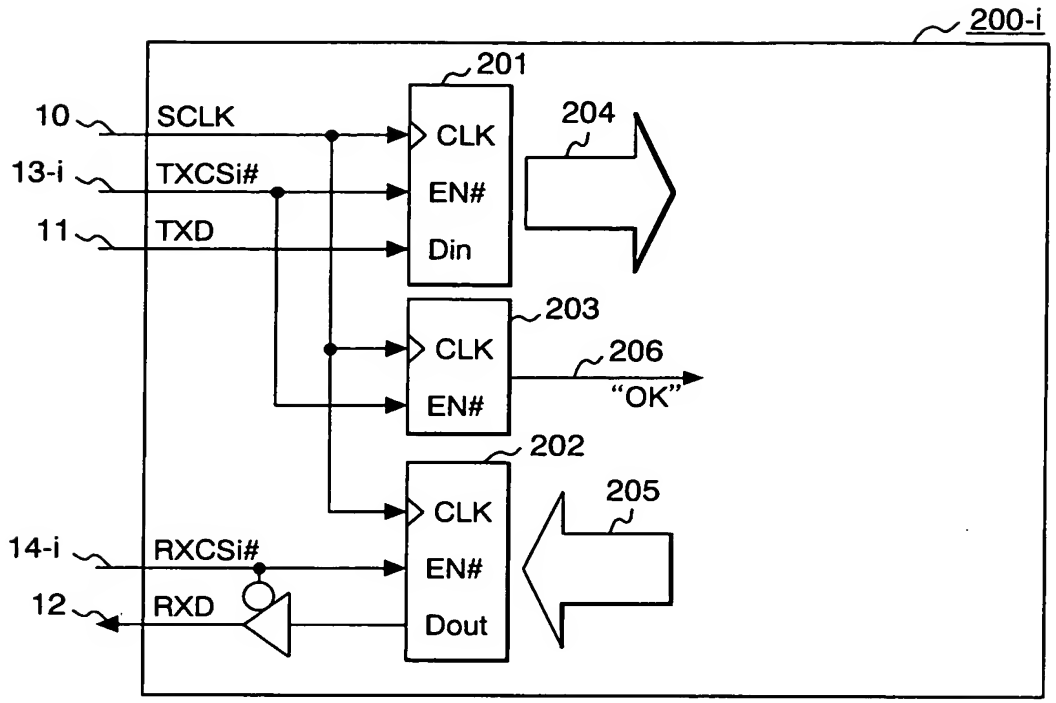

200-i
201
10
SCLK
13-i
TXCSi#
11
TXD
CLK
EN#
Din
204
203
CLK
EN#
206
"OK"
202
205
CLK
EN#
Dout
14-i
RXCSi#
12
RXD

FIG. 12

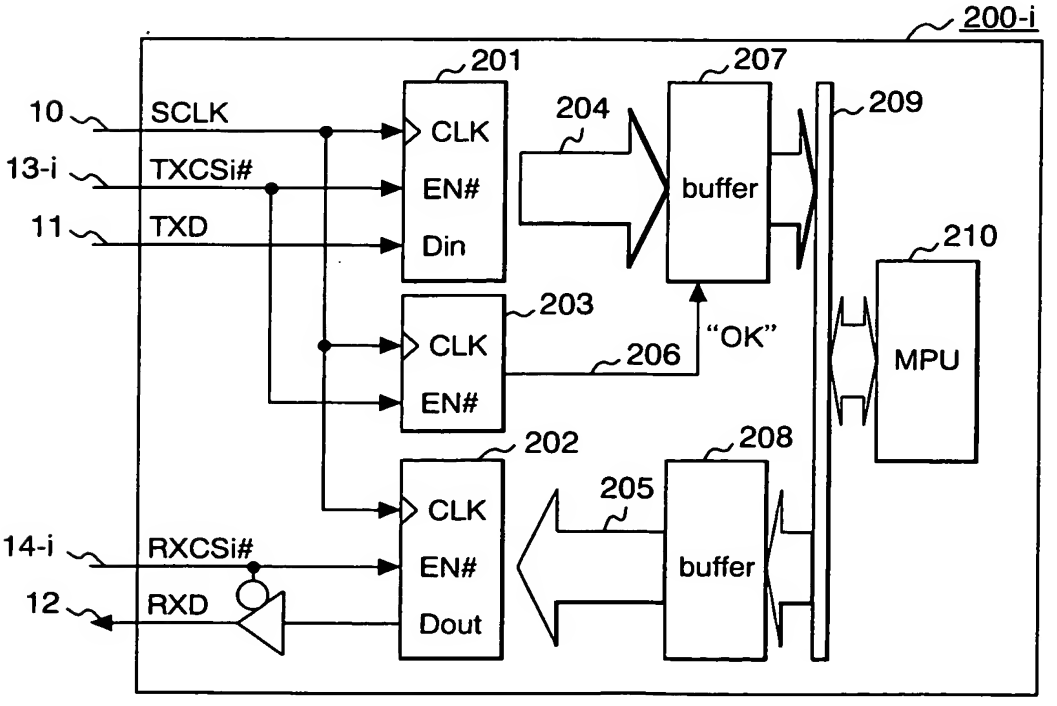

200-i
201
207
209
10
SCLK
13-i
TXCSi#
11
TXD
CLK
EN#
Din
204
buffer
210
203
CLK
EN#
206
"OK"
MPU
202
208
205
CLK
EN#
Dout
buffer
14-i
RXCSi#
12
RXD

FIG. 13

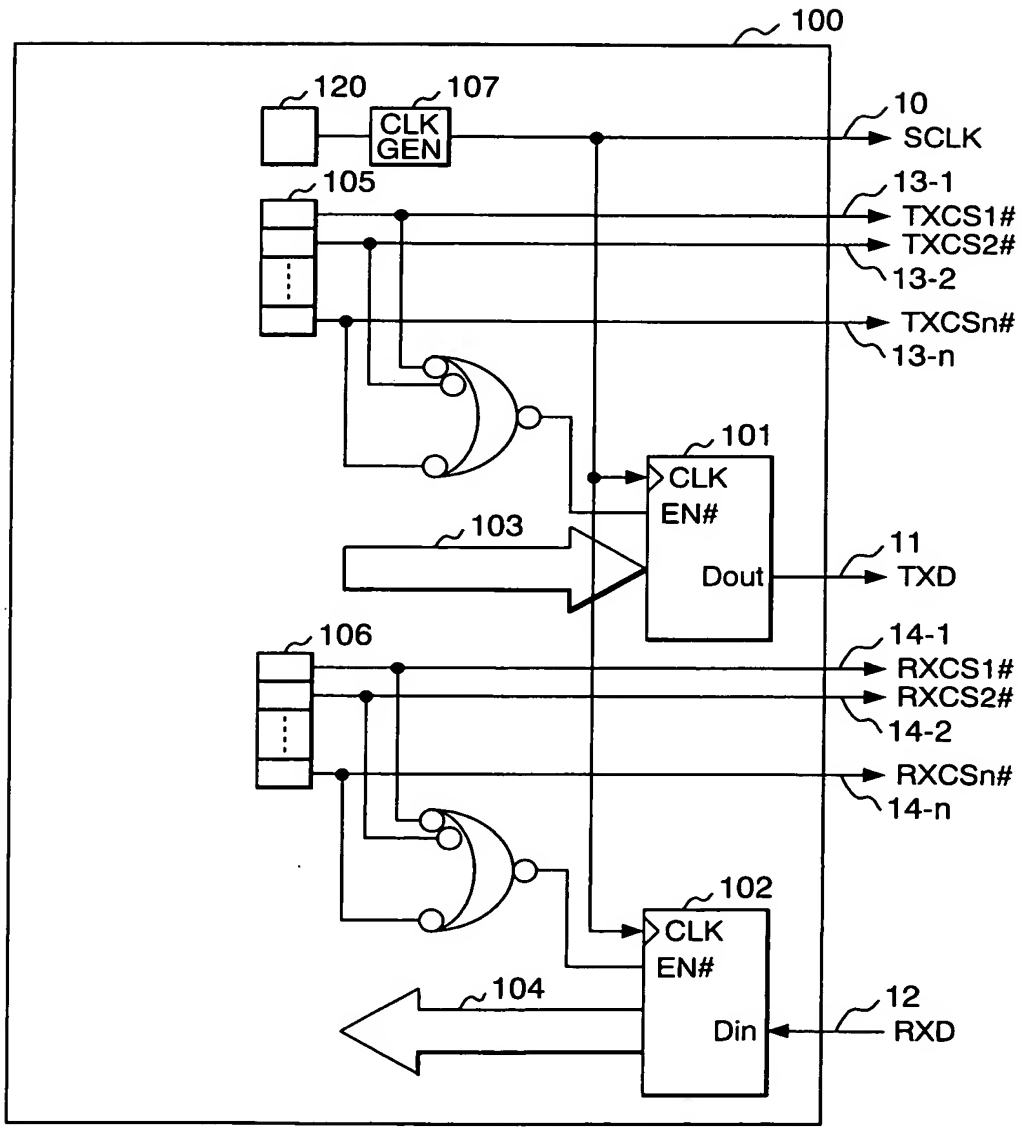

100
120
107
CLK GEN
10
SCLK
105
13-1
TXCS1#
TXCS2#
13-2
TXCSn#
13-n
101
CLK
EN#
103
Dout
11
TXD
106
14-1
RXCS1#
RXCS2#
14-2
RXCSn#
14-n
102
CLK
EN#
104
Din
12
RXD

FIG. 14

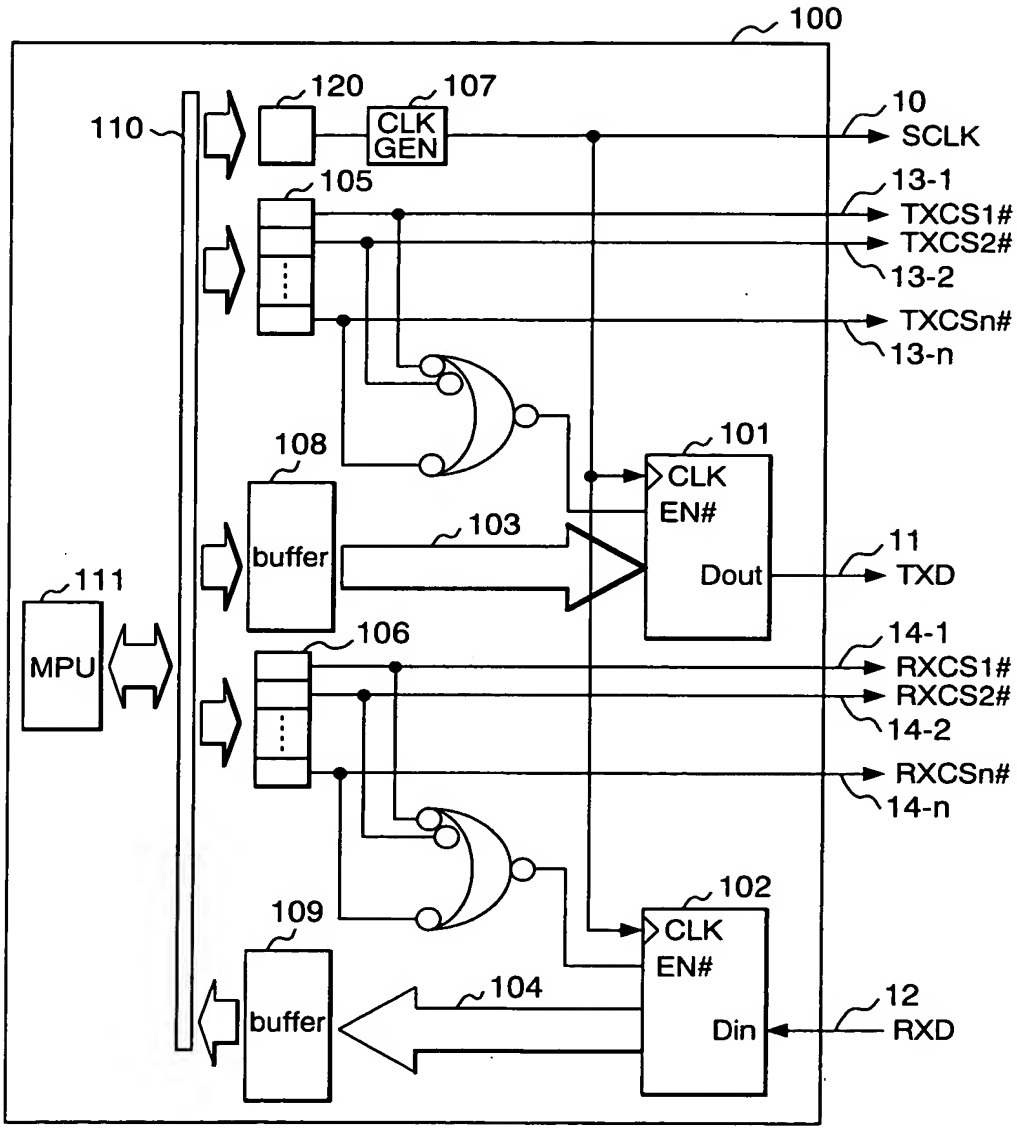

100
110
120
107
CLK GEN
10
SCLK
105
13-1
TXCS1#
TXCS2#
13-2
TXCSn#
13-n
108
101
CLK
EN#
buffer
103
Dout
11
TXD
111
MPU
106
14-1
RXCS1#
RXCS2#
14-2
RXCSn#
14-n
102
109
CLK
EN#
buffer
104
Din
12
RXD

FIG. 15

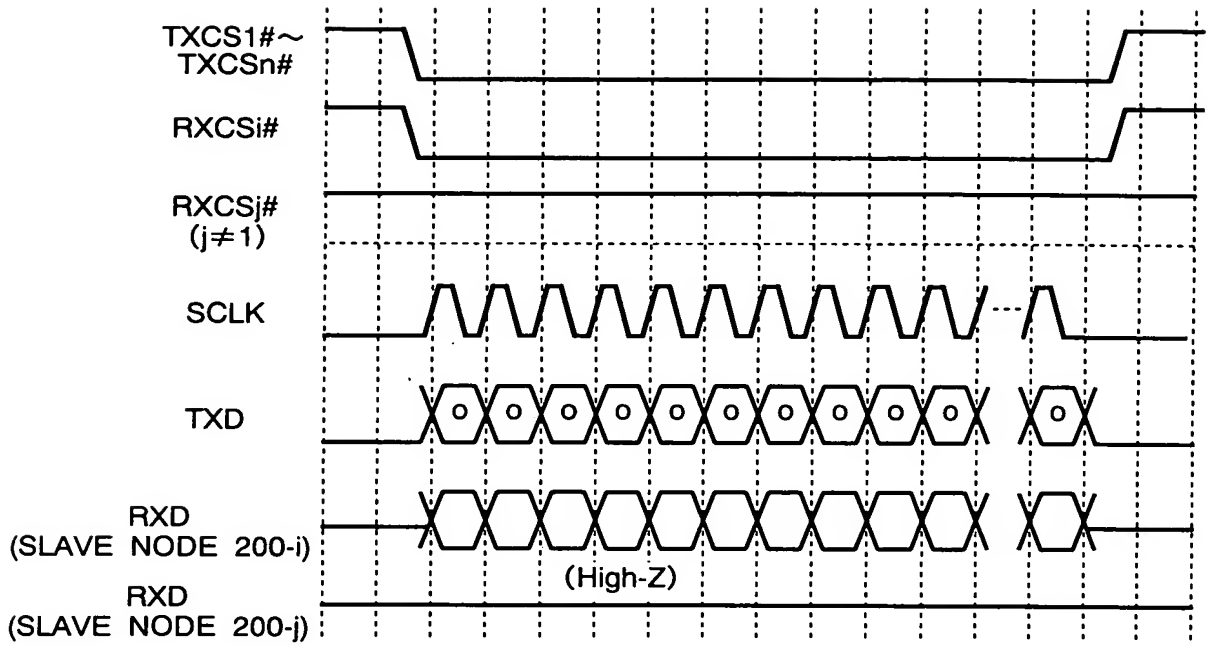

TXCS1#～
TXCSn#
RXCSi#
RXCSj#
(j≠1)
SCLK
TXD
RXD
(SLAVE NODE 200-i)
(High-Z)
RXD
(SLAVE NODE 200-j)

FIG. 16

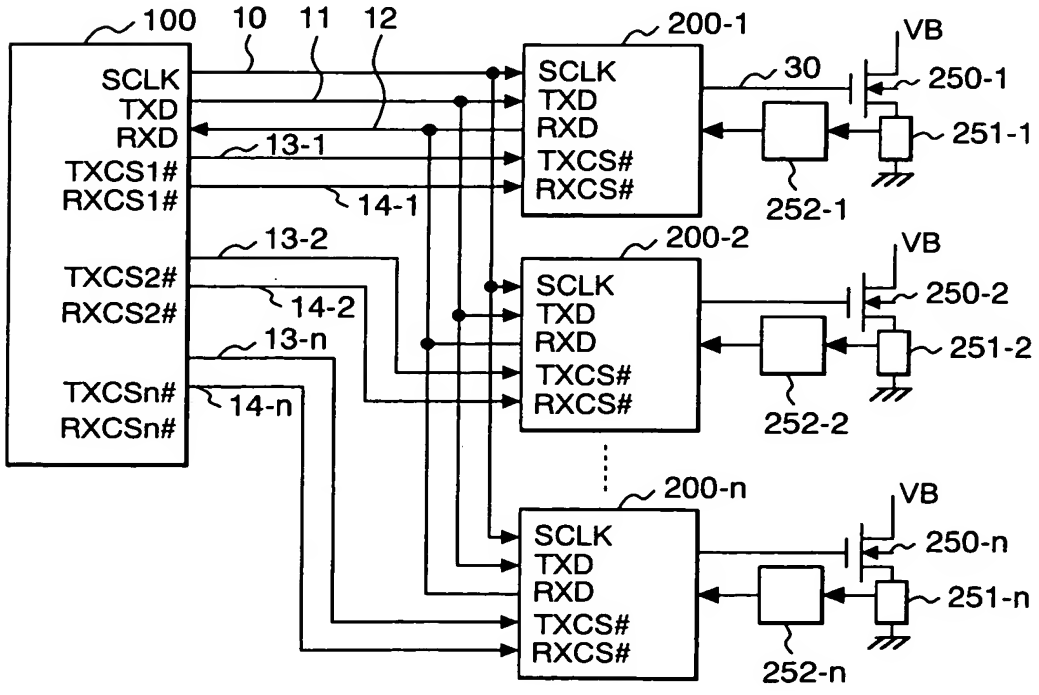

100
10
11
12
SCLK
TXD
RXD
13-1
TXCS1#
RXCS1#
14-1
13-2
TXCS2#
RXCS2#
14-2
13-n
TXCSn#
RXCSn#
14-n
200-1
SCLK
TXD
RXD
TXCS#
RXCS#
30
VB
250-1
251-1
252-1
200-2
SCLK
TXD
RXD
TXCS#
RXCS#
VB
250-2
251-2
252-2
200-n
SCLK
TXD
RXD
TXCS#
RXCS#
VB
250-n
251-n
252-n

FIG. 17

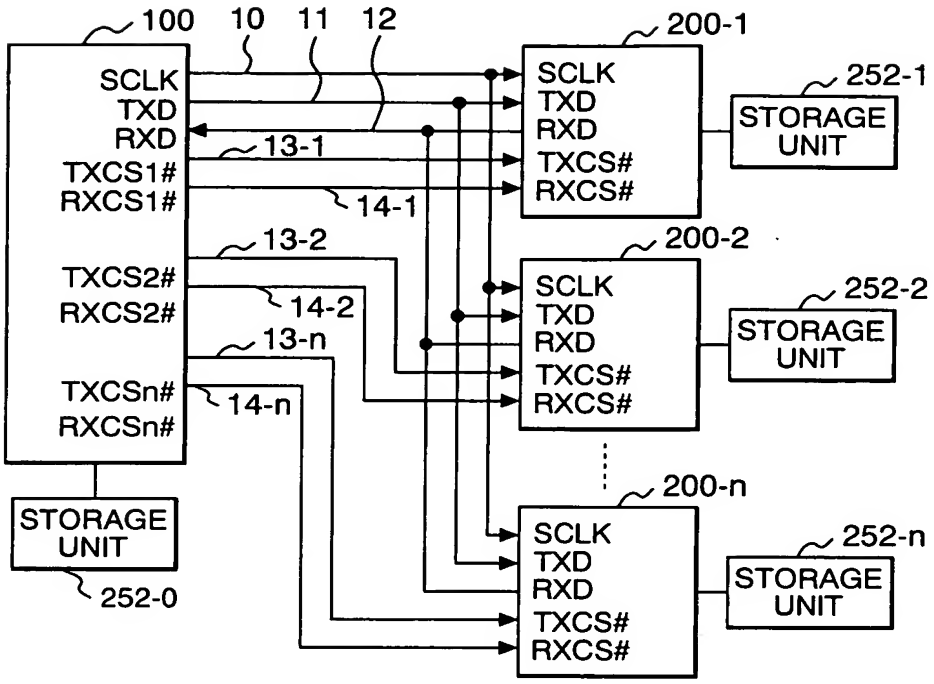

100
10
11
12
SCLK
TXD
RXD
TXCS1#
RXCS1#
TXCS2#
RXCS2#
TXCSn#
RXCSn#
13-1
14-1
13-2
14-2
13-n
14-n
STORAGE UNIT
252-0
200-1
SCLK
TXD
RXD
TXCS#
RXCS#
252-1
STORAGE UNIT
200-2
SCLK
TXD
RXD
TXCS#
RXCS#
252-2
STORAGE UNIT
200-n
SCLK
TXD
RXD
TXCS#
RXCS#
252-n
STORAGE UNIT

FIG. 18

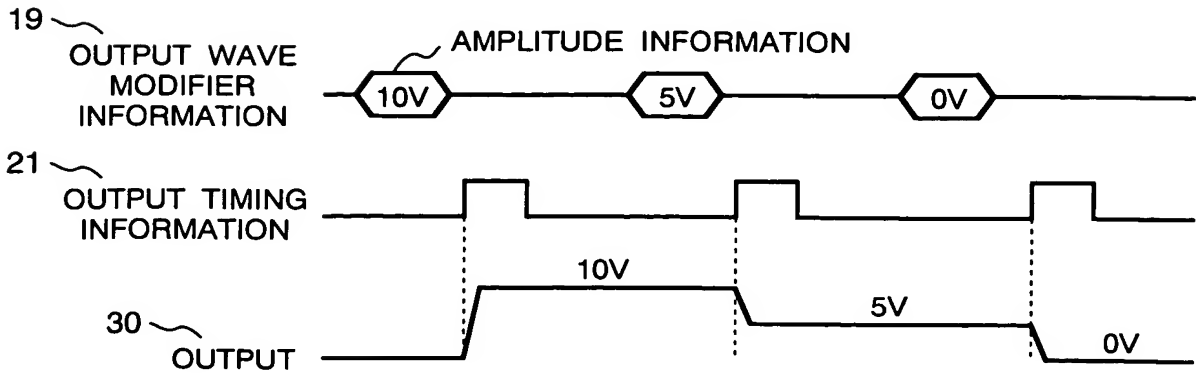

19
OUTPUT WAVE MODIFIER INFORMATION
AMPLITUDE INFORMATION
10V
5V
0V
21
OUTPUT TIMING INFORMATION
10V
5V
0V
30
OUTPUT

FIG. 19

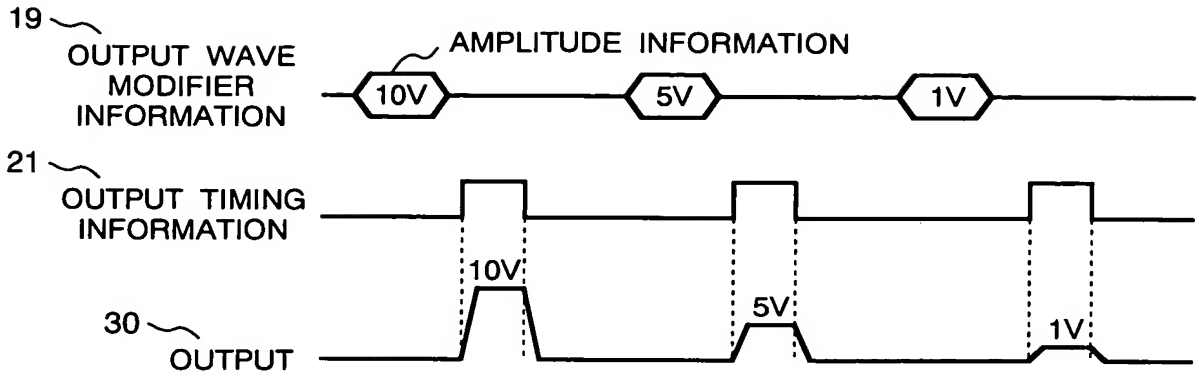


FIG. 20

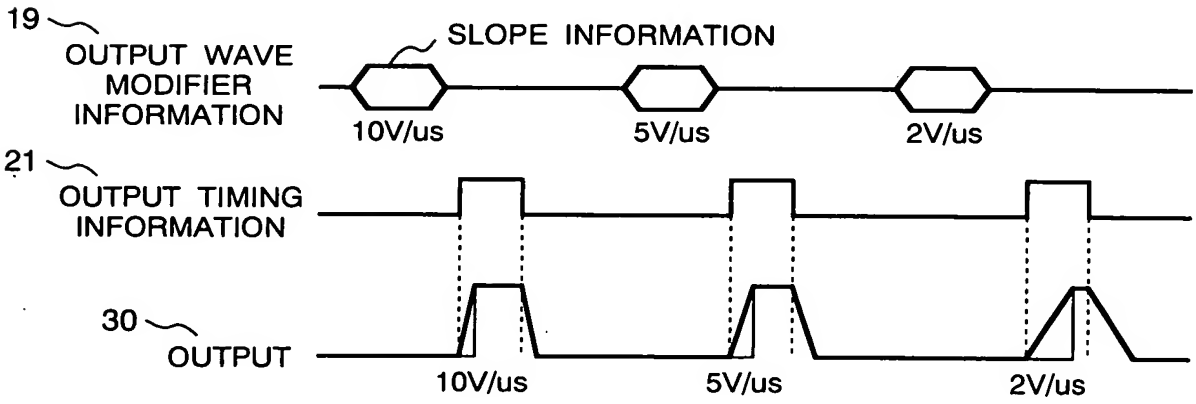


FIG. 21

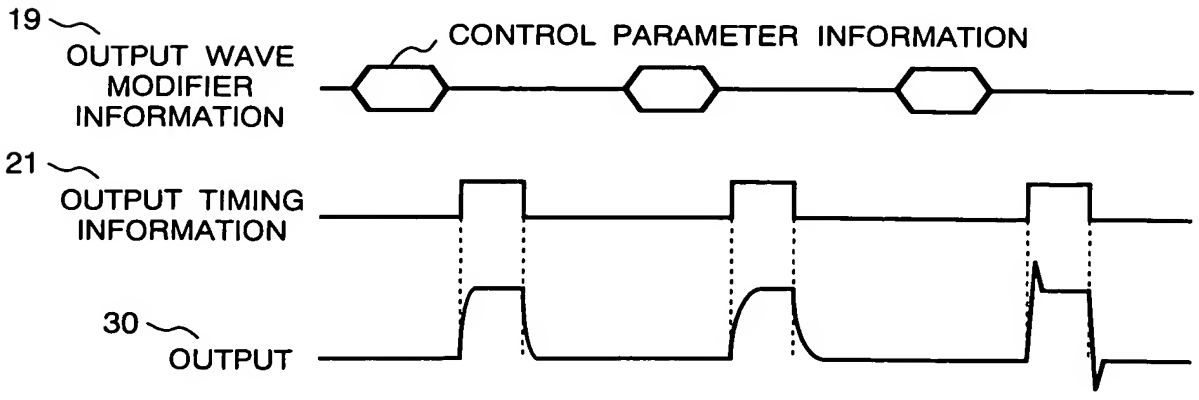


FIG. 22

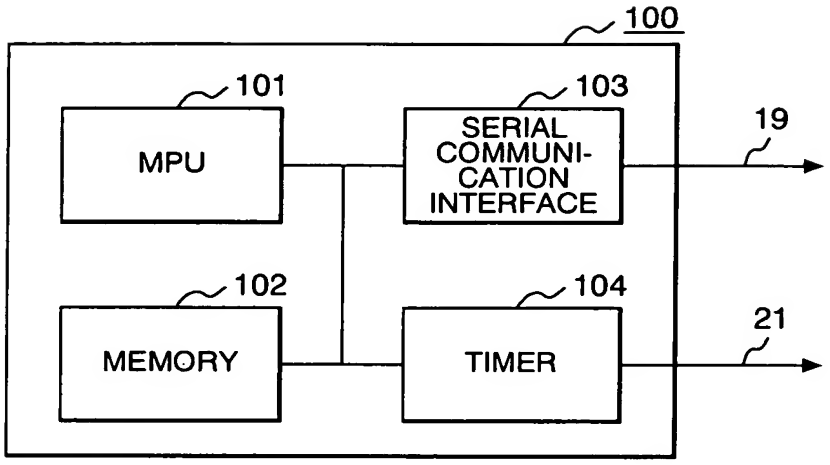
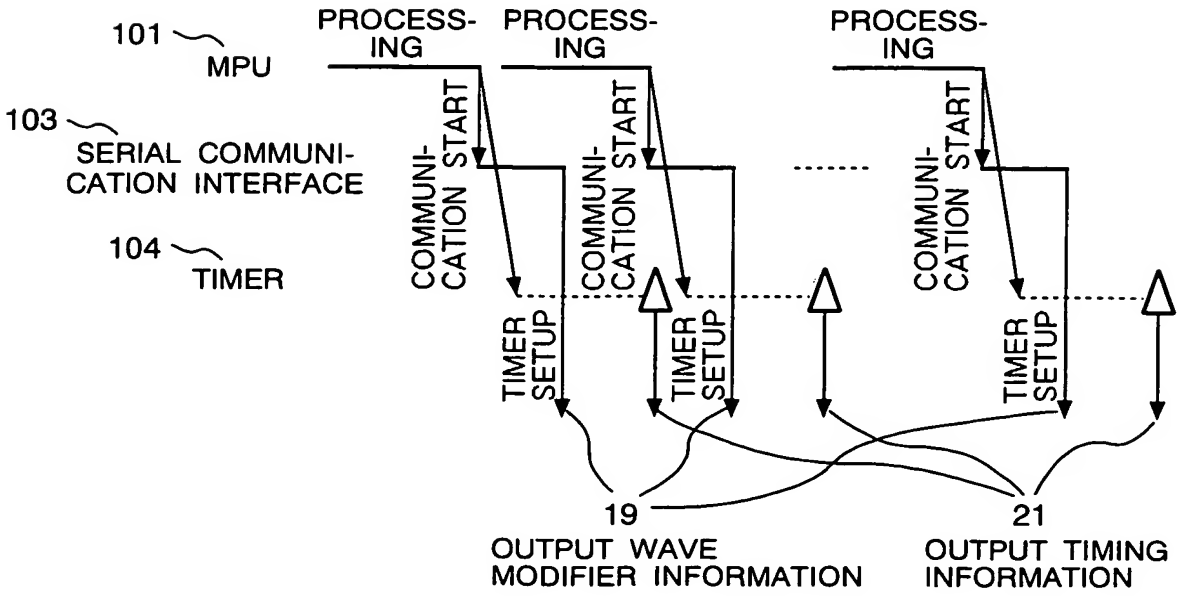

100
101
MPU
103
SERIAL COMMUNI-CATION INTERFACE
19
102
MEMORY
104
TIMER
21

FIG. 23


101
MPU
103
SERIAL COMMUNI-CATION INTERFACE
104
TIMER
PROCESS-ING
PROCESS-ING
PROCESS-ING
COMMUNI-CATION START
COMMUNI-CATION START
COMMUNI-CATION START
TIMER SETUP
TIMER SETUP
TIMER SETUP
19
OUTPUT WAVE MODIFIER INFORMATION
21
OUTPUT TIMING INFORMATION